

Amendment Under 37 C.F.R. §1.111
Serial No. 10/801,650
Attorney Docket No. 042199

REMARKS

Claims 1-27 are pending in the above-identified application. Figure 2 and claims 1, 8, 15, and 23 are amended. Claims 2-5, 9-12, 16, 17, 24, and 25 are canceled. No new subject matter is added. It is respectfully submitted that this Amendment is fully responsive to the Office Action dated January 17, 2006.

The Drawings were objected to as failing to comply with 37 C.F.R. §1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 66. Applicants hereby amend FIG. 2 to include reference numeral 66. Accordingly, Applicants respectfully request that the Examiner withdraw the objection to the drawings.

Claims 1 and 8 were objected to as being misdescriptive in claiming that the current circulating diode is connected in parallel to the solenoid. To expedite prosecution and clarify the subject matter, Applicants hereby amend claims 1 and 8 in accordance with the Examiner's suggestions. Support for these amendments is found, for example, in FIG. 3. Accordingly, Applicants respectfully request that the Examiner withdraw the objections to these claims.

Claims 1-4, 7-11 and 14 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Melbert et al.* (U.S. Pat. No. 6,744,615) in view of *Fujiwara et al.* (U.S. Pat. No. 5,978,201). Applicants respectfully disagree with the Examiner's reasons for rejection. However, to expedite prosecution, Applicants amend claims 1 and 8 to incorporate the features of claims 5 and 12, respectively. Applicants also cancel claims 2-5 and 9-12. In view of the Examiner's acknowledgement that claims 5 and 12 would be allowable if rewritten in

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independent form to include all of the limitations of the base claim and any intervening claims, Applicants respectfully submit that this rejection is now moot and that these claims be allowed.

Accordingly, Applicants respectfully request that the Examiner withdraw the obviousness rejection of claims 1, 6-8, 13, and 14.

Claims 15, 18, 21-23, and 26-27 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Melbert et al.* (U.S. Pat. No. 6,744,615) in view of *Swinbanks* (U.S. Pat. No. 6,462,927) and *Seale et al.* (U.S. Pat. No. 2001/0043450). To expedite prosecution and clarify the subject matter of the present invention, Applicants hereby amend claim 15 to incorporate the features of claims 16 and 17 and amend claim 23 to incorporate the features of claims 24 and 25. In view of this amendment and the following remarks, Applicants respectfully request that the Examiner withdraw the rejection of these claims.

Applicants respectfully disagree with the Examiner's conclusions. The mere fact that *Melbert et al.* may be modified in a manner suggested in the Office Action does not make the modification obvious unless the prior art suggested the desirability of the modification. Here, there is no discussion, suggestion, or motivation in the cited references to modify *Melbert et al.* to include at least the following missing element, *i.e.*, a feedforward controller for feedforward controlling said target current. *See* claims 15 and 23. Also, the discovery of the problem, *e.g.*, deterioration in response characteristic caused by falling of the drive current that is limited by a time constant determined by the inductance component and the resistance component of the solenoid, is not taught or suggested in the references cited by the Examiner. *See*, for example,

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pages 2-4 of specification. Therefore, it would not have been obvious to modify the *Melbert et al.* device, as suggested by the Examiner.

Furthermore, even if one were to attempt to modify the *Melbert et al.* device as suggested by the Examiner, the result would not be the present invention described in amended claims 15 and 23. *Seale et al.*, fails to teach or suggest that the feedback controller of the *Seale et al.* device selects a larger integral term constant when the gap is large and selects a smaller integral term constant when the gap becomes smaller. The Examiner has mischaracterized the teachings on page 7, paragraph 29. The Examiner has also mischaracterized the teachings of *Swinbaks*, e.g., column 1, lines 23-40. Also, *Swinbaks* fails to teach or suggest the feedforward controller (13) selecting a smaller gain when the gap (16) is large and selecting a larger gain when the gap (16) becomes smaller. Accordingly, even if one were to combine the cited references, the result would not be the claimed invention.

The Examiner rejected claims 16-17, 19-20, 24 and 25 under 35 U.S.C. §103(a). As discussed above, Applicants hereby cancel claims 16, 17, 24, and 25. Thus, the rejection of these claims is now moot. Also, claims 19 and 20 depend from independent claim 15 and should likewise be allowable in view of the above remarks by nature of dependency. Accordingly, Applicants respectfully request that the Examiner withdraw the rejection of these claims.

In view of the aforementioned amendments and accompanying remarks, Applicants submit that the claims, as herein amended, are in condition for allowance. Applicants request such action at an early date.

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If the Examiner believes that this application is not now in condition for allowance, the Examiner is requested to contact Applicants' undersigned attorney to arrange for an interview to expedite the disposition of this case.

If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,

WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP

A handwritten signature in black ink, appearing to read 'D. Auito', with a stylized flourish at the end.

Darrin A. Auito

Attorney for Applicants
Registration No. 56,024
Telephone: (202) 822-1100
Facsimile: (202) 822-1111

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AMENDMENTS TO THE DRAWINGS

The attached replacement sheets of drawings include changes to Fig. 2.